



[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 61

[NRC-2014-0080]

Low-Level Radioactive Waste Regulatory Program

AGENCY: Nuclear Regulatory Commission.

ACTION: Strategic assessment update; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is conducting an update to a Strategic Assessment of its Low-Level Radioactive Waste (LLRW) regulatory program. The objective of this assessment is to identify and prioritize activities that the staff can undertake to ensure a stable, reliable and adaptable regulatory framework for effective LLRW management, while also considering future needs and changes that may occur in the nation's LLRW management system. The staff is seeking comments on developments that would affect the LLRW regulatory program in the next several years that would affect licensees and sited States and actions that the NRC could take to ensure safety, security, and the protection of the environment.

DATES: Submit comments by **[INSERT DATE 60 DAYS FROM DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received before this date.

ADDRESSES: You may submit comments by any of the following methods (unless this document describes a different method for submitting comments on a specific subject):

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2014-0080. Address questions about NRC dockets to Carol Gallagher; telephone: 301-287-3422; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **Mail comments to:** Cindy Bladey, Office of Administration, Mail Stop: 3WFN-06-44M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

For additional direction on accessing information and submitting comments, see “Accessing Information and Submitting Comments” in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Melanie C. Wong, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-2432; e-mail: Melanie.Wong@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Accessing Information and Submitting Comments.

A. Accessing Information.

Please refer to Docket ID NRC-2014-0080 when contacting the NRC about the availability of information regarding this document. You may access publicly-available information related to this document by any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2014-0080.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**
You may access publicly available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search.](#)" For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The "Strategic Assessment of Low-Level Radioactive Waste Regulatory Program" and "Transcript of Public Workshop on Low-Level Radioactive Waste Disposal Rulemaking and Strategic Assessment of Low-Level Radioactive Waste" are available in ADAMS under Accession Nos. ML071350291 and ML14086A540.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

B. Submitting Comments.

Please include Docket ID NRC-2014-0080 in the subject line of your comment submission, in order to ensure that the NRC is able to make your comment submission available to the public in this docket.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at <http://www.regulations.gov> as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment submissions into ADAMS.

II. Background.

In 2007, due to developments in the national program for LLRW disposal, as well as changes in the regulatory environment, the NRC's LLRW program faced new challenges and issues. New technical issues related to protection of public health and the environment and security emerged. These challenges and issues included (1) the desire of industry for greater flexibility and reliability in LLRW disposal options; (2) increased storage capacity for Class B and Class C LLRW because of the limited access of the Barnwell, South Carolina, disposal facility in 2008 to out-of-compact waste generators; (3) the potential need to dispose of large quantities of power plant decommissioning waste, as well as depleted uranium from enrichment facilities; (4) the limited resources in the NRC LLRW program; (5) increased security concerns related to storing LLRW in general and sealed radioactive sources in particular as a result of the September 11, 2001, terrorist attack; and (6) new waste streams that may be generated (for example, by the next generation of nuclear reactors and the potential reemergence of nuclear fuel reprocessing in the United States).

Based on these challenges and issues, the NRC staff conducted a Strategic Assessment of the NRC's regulatory program for LLRW in 2007. The NRC staff provided a description of the results of the Strategic Assessment in SECY-07-0180, "Strategic Assessment

of Low-Level Radioactive Waste Regulatory Program” (ADAMS Accession No. ML071350291).

The objectives of the Strategic Assessment were to identify and prioritize the NRC staff’s activities and continue to: (1) ensure safe and secure LLRW disposal; (2) improve the effectiveness, efficiency, and adaptability of the NRC’s LLRW regulatory program; and (3) ensure regulatory stability and predictability, while allowing flexibility in disposal options.

After considering extensive stakeholder input suggesting a variety of activities to include in the Strategic Assessment, the NRC staff developed a list of 20 activities responsive to identified programmatic needs. The staff evaluated these activities and assigned them priorities of high, medium, or low. These ranged from narrowly focused activities such as updating LLRW storage guidance to broader activities such as suggesting legislative changes to Congress to improve the LLRW national program.

In addition, the staff in the 2007 Strategic Assessment not only considered the LLRW system as it currently exists, but also considered how the LLRW regulatory program might change with time. The staff developed three scenarios, or “alternative futures,” categorized as optimistic, realistic, and pessimistic. These scenarios are described in Appendix B of SECY-07-0180. The “optimistic future” scenario was one in which the staff envisioned a continuous expansion of safe, secure and moderately priced disposal capacity for the entire spectrum of LLRW. The “realistic future” scenario was characterized by a significant curtailment of disposal capacity and continued cost escalation for much of the spectrum of LLRW, while the “pessimistic future” scenario presumed a virtual elimination of disposal capacity for LLRW in the not too distant future. Accordingly, when the staff analyzed the proposed activities to determine their priority, their responsiveness to each of the future scenarios was one of the factors considered.

The NRC staff has completed two of its high priority activities identified in the 2007 Strategic Assessment; i.e., updating guidance for LLRW storage, and evaluating the disposal of

depleted uranium and the measures needed to ensure its safe disposal. Regarding the activity related to the disposal of depleted uranium, the NRC staff analyzed the impacts of near-surface disposal of large quantities of depleted uranium to determine if § 61.55(a) of Title 10 of the *Code of Federal Regulations* (10 CFR), needed to be changed to assure that large quantities of depleted uranium are disposed of in a manner that meets the performance objectives of 10 CFR Part 61. While the NRC staff concluded that large quantities of depleted uranium can be disposed of in a near-surface disposal facility under certain conditions and still meet the performance objectives of 10 CFR Part 61, the NRC staff proposed changing the existing regulations to incorporate those conditions. The NRC staff is proceeding with a rulemaking to amend 10 CFR Part 61 to specify a requirement for a site-specific analysis for the disposal of large quantities of depleted uranium. A proposed rule is expected to be published in 2015. The NRC staff continues to work on three additional activities; i.e., finalizing a procedure for the review of low-activity waste disposal in Resource Conservation and Recovery Act facilities not licensed by the NRC, revising 10 CFR Part 61, and revising the 1995 Concentration Averaging and Encapsulation Branch Technical Position.

After 7 years, progress has been made in completing these activities. However, the national LLRW program continues to evolve. The staff has determined that as a result of that continued evolution, it will need to make changes to the 2007 Strategic Assessment before continuing completion of the other specified activities.

In order to set the direction for the NRC's LLRW regulatory program in the next several years, the NRC staff will begin developing an updated Strategic Assessment of the NRC's LLRW program. As part of that effort, the staff is proposing to revise the alternative future disposal scenarios specified in the 2007 Strategic Assessment. The new assessment will provide opportunities for stakeholder engagement. The objectives of this updated Strategic Assessment remain the same as the 2007 Strategic Assessment; i.e., to identify and prioritize

activities that the staff can undertake to ensure a stable, reliable and adaptable regulatory framework for effective LLRW management, while also considering future needs and changes that may occur in the nation's commercial LLRW management system. As part of this assessment, the NRC staff is soliciting public comment on what changes, if any, should be made to the current LLRW program regulatory framework, as well as specific actions that the staff might undertake to facilitate such changes.

III. Specific Requests for Comments.

The NRC staff is requesting that persons consider and address the following questions as they develop and provide their remarks:

Regarding the Current National LLRW Disposal Landscape

1. What changes are anticipated in the LLRW area with regard to safety, security, and the protection of the environment?
2. As a result of those changes, what activities should remain on the list of proposed activities developed during the 2007 Strategic Assessment, and are these activities appropriately prioritized in order to ensure safe and secure LLRW disposal, improve the effectiveness of NRC's regulations, and assure regulatory stability and predictability while allowing flexibility in disposal options? What new activities should be added?

Regarding the Current LLRW Disposal Regulatory System

1. As a result of the new national landscape, what are your key safety concerns relative to LLRW disposal?

2. What vulnerabilities or impediments, if any, are in the current regulatory approach toward LLRW disposal in the U.S. that need to be addressed in order to strengthen the NRC's ability to ensure safe and secure LLRW disposal, improve the effectiveness of its regulations, and assure regulatory stability and predictability while allowing flexibility in disposal options?

3. What actions could be taken by the NRC and other Federal and State authorities, as well as by private industry and national scientific and technical organizations, to optimize management of LLRW? Which of the following actions are most likely to yield benefits?

- a. Changes in regulations;
- b. Changes in regulatory guidance;
- c. Changes in industry practices; and
- d. Other (name).

4. Are there additional actions (regulatory and/or industry initiated) that can/should be taken regarding specific issues such as:

- a. Storage, disposal, tracking and security of Greater-than-class-C (GTCC) waste (particularly sealed sources);
- b. Extended storage of LLRW;
- c. Disposal options for low-activity waste/very low level waste;
- d. On-site disposal of LLRW; and
- e. Other (name).

5. What unintended consequences might result from the potential changes identified in response to questions 3 and 4?

Potential Alternative Futures

The following revised disposal scenarios are proposed for incorporation in the updated Strategic Assessment. Are there recommendations to improve the proposed disposal scenarios?

“Optimistic” Scenario Assumptions:

All aspects for management of waste from the back end of the fuel cycle are continuously available, including uninterrupted commercial disposal capacity for all Class A, B, and C LLRW and from all waste generators. Some limited competition results in disposal costs that are considered reasonable for most waste generators. Though most waste that arise from 11e.(3) and 11e.(4) of the Atomic Energy Act of 1954, as amended, byproduct material is disposed at the Richland, WA, disposal facility, some are disposed elsewhere. Greater-than-class-C LLRW disposal is available at a U.S. Department of Energy (DOE) facility licensed by the NRC. There is a regulatory framework and process in place for low-activity waste that enables safe disposal in an efficient manner. A variety of low activity waste disposal options keeps the average cost of disposal low for this type of waste. There is little need for extended storage of LLRW or for new innovations regarding treatment of LLRW, including volume reduction or use of nonradioactive surrogates. There are no significant events involving safety, security, or protection of the environment, and therefore little or no negative press. Implementation of the 10 CFR Part 61 limited rulemaking has occurred with the appropriate compatibility designation.

“Realistic” Scenario Assumptions:

Class A, B, and C LLRW have clear paths forward for disposal. Small quantities of relatively high activity LLRW are stored at industrial, medical, and research facilities and at Nuclear Power Plants (NPP’s). Limited quantities of waste that arise from 11e.(3) and 11e.(4) of the Atomic Energy Act of 1954, as amended, byproduct material can be disposed at the Richland, WA disposal facility. A small percentage of GTCC—mainly sealed sources—continues to be moved out of the commercial sector into DOE storage, but a disposal facility for GTCC waste is still many years away. Orphan waste is identified in an ad hoc fashion, and a

path forward for disposition/disposal becomes more limited. Disposal options for low-activity waste are few, and approvals continue to be on a case-by-case basis that takes significant time to obtain approval. The LLRW regulatory framework is relatively stable, but necessarily reactive to certain circumstances, such as development of new technology, external events and innovations in waste processing, stabilization, and storage technology. The 10 CFR Part 61 limited rulemaking has been promulgated.

“Pessimistic” Scenario Assumptions:

Disposal capacity for all types of LLRW is severely constrained and costs of disposal are prohibitively high for many generators. Consequently, there are significant increases in both the volume and activity of LLRW held in long-term storage. Disposal options for low-activity waste are severely constrained, and there are no prospects for development of a GTCC disposal facility in the near-to-medium term. Beneficial uses of radioactive material in research, medical care and industrial applications decrease because of escalating uncertainties (both in disposal options as well as costs). Escalating costs become the driver for significant innovations in processing and storage technology. The public becomes concerned about potential safety impacts of LLRW storage as it becomes increasingly aware of its widespread use by licensees. Decommissioning of some NPP's is postponed, or different decommissioning strategies are used due to high disposal costs, uncertain disposal availability and conflicting public and/or political pressures. The promulgation and/or implementation of the 10 CFR Part 61 limited rulemaking has been significantly delayed.

Interagency Communication and Cooperation

1. Based on your observations of what works well and not-so-well, domestically and/or internationally, with regard to the management of radioactive and/or hazardous waste, what actions can the NRC and other Federal regulatory agencies take to improve their communication with affected and interested stakeholders?

2. What specific actions can NRC take to improve coordination with other Federal agencies so as to obtain a more consistent treatment of radioactive wastes that possess similar or equivalent levels of biological hazard?

IV. Workshop.

On March 7, 2014, the NRC held a workshop to gather information on the update to the NRC's 2007 Strategic Assessment of the LLRW regulatory program in Phoenix, Arizona. The transcript of the workshop is publicly available in ADAMS under accession no. ML14086A540. The NRC staff intends to utilize the information gathered from the workshop, as well as the comments received in response to this notice, to update its Strategic Assessment of the NRC's LLRW regulatory program.

Dated at Rockville, Maryland this 7th day of May 2014.

For the Nuclear Regulatory Commission.

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